

WHAT IS CLAIMED IS:

1. A mounting information-collecting device  
for collecting mounting information concerning mounted  
5 statuses of circuit boards by using an optical signal,

the mounting information-collecting device  
comprising:

light-emitting means that emits the optical  
signal;

10 optical signal-processing means that apply  
processing to the optical signal in a manner unique to  
each of the circuit boards to thereby generate a processed  
optical signal; and

mounting information-collecting means that  
15 receives the processed optical signal and detects whether  
or not the processing has been applied, to thereby collect  
the mounting information.

2. The mounting information-collecting  
20 device according to claim 1, wherein said optical signal-  
processing means each comprise a first optical filter  
portion for passing all wavelengths of the optical signal  
and a second filter portion for removing a particular  
wavelength specifically associated with a corresponding  
25 one of the circuit boards.

3. The mounting information-collecting

device according to claim 2, wherein when the corresponding circuit board is not mounted, said optical signal-processing means causes the optical signal to enter said first optical filter portion, whereas when the corresponding circuit board is mounted, said optical signal-processing means causes the optical signal to enter said second optical filter portion.

4. The mounting information-collecting device according to claim 1, wherein said signal-processing means applies the processing to the optical signal emitted from said light-emitting means and having a directional property but not having a diffusing property, such that a cutoff pattern of the optical signal varies with each circuit board.

5. The mounting information-collecting device according to claim 1, wherein said optical signal-processing means are each formed by a controllable optical filter which applies wavelength filtering processing to the optical signal based on an electric signal delivered from said corresponding circuit board.

6. A connector for connecting a circuit board to a housing, comprising:

an optical filter having a first optical filter portion for passing all wavelengths of an optical signal

and a second optical filter portion for removing a particular wavelength specifically associated with the circuit board;

an optical fiber-holding portion for holding a  
5 first optical fiber for guiding the optical signal and a second optical fiber for guiding the optical signal, such that an end face of said first optical fiber and an end face of said second optical fiber have points of contact with a light-receiving portion of said optical filter and  
10 a light-emitting portion of said optical filter, respectively, and

a slider mechanism for sliding said optical filter in a front-rear direction in which the circuit board is movable, in accordance with mounting or  
15 demounting of the circuit board to or from the housing, to thereby change the points of contact.

7. A mounting information-collecting method of collecting mounting information concerning mounted  
20 statuses of circuit boards by using an optical signal,

the mounting information-collecting method comprising the step of:

emitting the optical signal;

applying processing to the optical signal in a  
25 manner unique to each of the circuit boards to thereby generate a processed optical signal; and

receiving the processed optical signal and

detecting whether or not the processing has been applied,  
to thereby collect the mounting information.

8. The mounting information-collecting  
5 method according to claim 7, wherein the processing is  
performed by passing all wavelengths of the optical signal  
when the circuit board is not mounted, and by removing a  
particular wavelength of the optical signal specifically  
associated with each of the circuit boards, when the  
10 circuit board is mounted.

9. The mounting information-collecting  
method according to claim 7, wherein the processing is  
applied to the optical signal having a directional  
15 property but not having a diffusing property, such that a  
cutoff pattern of the optical signal varies with each  
circuit board.

10. The mounting information-collecting  
20 method according to claim 7, wherein the processing is  
performed by applying wavelength filtering processing to  
the optical signal based on an electric signal delivered  
from each of the circuit boards.